



# POLICY AND PROCEDURE

## MONTGOMERY COUNTY FIRE AND RESCUE SERVICE

#26-06AMII

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### RESPIRATORY PROTECTION POLICY

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#### RESPIRATORY PROTECTION POLICY

Issued by: Fire Chief

Policy No. 26-06AMII

Authority: Code Section 21-2.(d)(4)

Effective Date: October 15, 2011

**BACKGROUND:** This amended policy includes requirements consistent with the provisions established in 29 CFR 1910.134, *Respiratory Protection Standard*, as amended, issued by the United States Department of Labor, Occupational Safety and Health Administration, for implementation by all Montgomery County Fire and Rescue Service (MCFRS) personnel. The policy includes provisions for the selection, fit testing, maintenance, repair, and safe use of all components of respiratory protection equipment, and the medical evaluations, training certifications, and record keeping required for the fire and rescue service personnel who use them. Certain requirements of this policy also establish safety procedures for use when these personnel perform operations in atmospheres that are immediately dangerous to life and health (IDLH).

Section 1. **Purpose:** To reduce the risk of injury and illness to fire and rescue personnel while they are working in IDLH atmospheres, and in hazardous and/or toxic atmospheres.

Section 2. **Applicability:** This policy applies to all personnel who perform firefighting and rescue duties in the Montgomery County Fire and Rescue Service. This policy was developed in cooperation with the International Association of Fire Fighters, Local 1664, and with the Montgomery County Volunteer Fire-Rescue Association (MCVFRA).

Section 3. **Definitions.**

- a. **Air-Purifying Respirator (APR).** A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.



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- b. **Closed Circuit Breathing Apparatus (CCBA).** A long-duration oxygen re-breathing respirator which uses a canister filled with sorbent to remove specific contaminants from the air passed through the system.
- c. **Compressed Breathing Air.** Compressed breathing air with a minimum air quality of Grade D, as specified by the Compressed Gas Association, G-7.1, 5th Edition, 2004 commodity specification for air.
- d. **Emergency Breathing Support System (EBSS).** A component of the respirator that allows two users of similarly equipped SCBA to share a common air supply, under specific emergency conditions.
- e. **Face-piece.** The respirator component that covers the wearer's nose, mouth, and in some cases, the eyes. It includes the headbands, exhalation valves, and in some cases, components that are required to connect it to a breathable air supply.
- f. **Fire/Rescue Occupational Medical Section (FROMS).** The MCFRS section that performs physical examinations and medical screenings and related evaluations of all MCFRS personnel.
- g. **Fit Test.** The use of a protocol to qualitatively (QLFT) or quantitatively (QNFT) evaluate the fit of a respirator on an individual.
- h. **Hazardous and/or Toxic Atmosphere.** An environment that may be present or contain respiratory hazards, during, but not limited to, overhaul, hazardous materials, EMS, and fire investigations operations.
- i. **Immediately Dangerous to Life or Health (IDLH).** An atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.
- j. **N95 Respirator/Mask.** A surgical N95 respirator/mask is a NIOSH-approved respirator that has also been cleared by the Food and Drug Administration (FDA) as a surgical mask that has a filter efficiency of 95% or greater against solid particulates and non-aerosols that do not degrade filter performance.
- k. **NFPA 1404.** Alpha-numeric identifier of the National Fire Protection Association (NFPA) *Standard for Fire Service Respiratory Protection Training*, 2006 Edition.



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- l. **NFPA 1989.** Alpha-numeric identifier of the National Fire Protection Association (NFPA) *Standard for Breathing Air Quality for Emergency Services Respiratory Protection*, 2008 Edition.
- m. **Personal Alert Safety System (PASS) Device.** A warning/notification device integrated into the Self-Contained Breathing Apparatus.
- n. **Personnel.** For purposes of this policy, all on-duty firefighter/rescuer and emergency medical service providers, both career and volunteer.
- o. **Powered Air-Purifying Respirator (PAPR).** A respirator that uses a blower to force the ambient air through air-purifying elements to the inlet cover.
- p. **Qualitative Fit Test (QLFT).** A subjective test that relies on an individual's response to the test agent by his/her ability to taste or smell the challenge agent used in a pass/fail test. This test is used for negative-fitting respirators.
- q. **Quantitative Fit Test (QNFT).** An assessment of the adequacy of the respirator fit test that uses numerical measurements calculated by a computer-generated program. This is a more accurate test method, because it is objective and provides a numerical test result.
- r. **Respiratory Protective Equipment (RPE).** A device designed to protect the wearer from inhaling harmful atmospheres. This equipment includes SCBA, APR, CCBA, N95, PAPR and SAR.
- s. **Self-Contained Breathing Apparatus (SCBA).** An atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.
- t. **Supplied Air Respirator (SAR).** A breathing air device that provides air from a stationary storage cylinder through a high pressure hose. A SAR includes an escape cylinder with at least five minutes of breathing air.
- u. **Using SCBA.** The status of personnel who are wearing full protective gear, with SCBA in place and face-piece on, with cylinder valve open, PASS device on, and **are** breathing from the SCBA.



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- v. **Wearing SCBA.** The status of personnel who are wearing full protective gear, with SCBA in place and face-piece ready for use, with cylinder valve open and PASS device on, but are **not** breathing from the SCBA.
- w. **29 CFR 1910.134.** Alpha-numeric identifier of the respiratory protection standard issued by the United States Department of Labor, Occupational Safety and Health Administration (OSHA), that provides rules and regulations on the selection, maintenance, and use of SCBA.
- x. **49 CFR 180.25.** Alpha-numeric identifier of the Code of Federal Regulations by the United States Department of Transportation (DOT), pertaining to SCBA cylinder testing.

Section 4. **Policy.** The Montgomery County Fire and Rescue Service requires all fire and rescue **personnel** to use safe and efficient procedures and appropriate personal and **RPE** on all emergency incidents. To ensure their safety, MCFRS provides properly fitted, tested, and maintained **RPE** to all fire and rescue **personnel**. MCFRS **personnel** must be trained in and consistently use these devices in all situations where an **IDLH** atmosphere or **hazardous and/or toxic atmosphere** may exist. **Personnel** will be provided with **RPE**, as appropriate, which meet the requirements of NIOSH (National Institute for Occupational Safety and Health), FDA (Food and Drug Administration), MSHA (Mine Safety and Health Administration), and **NFPA** applicable standards at the time of purchase.

To further ensure their safety, all MCFRS **personnel** must also comply with the "2 in/2 out" procedures established in **29 CFR 1910.134** (g)(3) and (4) when entering an **IDLH** atmosphere.

#### Section 5. **Procedure.**

**General Guidelines.** **Personnel using SCBA** must operate in teams of two or more when entering an **IDLH** atmosphere. They must communicate visually, audibly, by physical contact, or with safety guidelines. They should remain in close proximity to each other, enabling them to provide mutual assistance in case of an emergency.

The **SCBA/SAR** will operate only in the positive pressure mode. **SCBA** must have a minimum rated service duration of 45 minutes, and must be equipped with an integrated **PASS device**, unless specifically waived by the Fire Chief (i.e., for hazmat technicians and bomb technicians).



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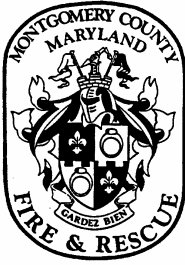
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**Personnel** who are providing patient care must have an **N95 respirator/mask** immediately available for use. Medical-grade face masks should be worn by direct patient care providers when blood and/or body secretions may be splashed into the provider's mouth. **N95 masks** must be worn in suspected cases of airborne transmitted diseases such as tuberculosis, influenza, measles, pneumonia and meningitis.

- a. **N95 Respirator/Mask Fit Testing.** A **qualitative fit test** is conducted once a year during annual physicals administered at **FROMS**, in accordance with **29 CFR 1910.134**.
- b. **Respiratory Protection Certifications and Fit Testing.** All MCFRS **personnel** who may be exposed to **IDLH** atmospheres must use **RPE**. **Personnel** who are required to use **RPE** must be medically certified by Montgomery County's **Fire and Rescue Occupational Medical Section (FROMS)**.
  1. At a minimum, medical certification must follow the guidelines provided in **29 CFR 1910.134**, Appendix C.
  2. Records of medical certification for the use of **RPE** will be maintained with **personnel** health records. **FROMS** must advise the Fire Chief or designee of **personnel** who are not qualified to use **RPE**.
  3. All MCFRS **personnel** must successfully complete an annual physical administered by **FROMS**, and be in compliance with NFPA 1582 *Standard on Comprehensive Occupational Medical Program for Fire Departments*.
- c. **SCBA Training and Annual Recertification.** All **personnel** must receive initial **SCBA** training that complies with NFPA 1404 *Standard for Respiratory Protection Training* as part of the *Firefighter I* training course, or through an approved equivalent program, and must obtain annual re-certification through the PSTA's in-service training program.
  1. The MCFRS Public Safety Training Academy is responsible for distributing **SCBA** training materials.
  2. MCFRS Battalion Chiefs or Local Fire and Rescue Department (LFRD) training coordinators must ensure that **SCBA** training is completed in their Battalions and in their stations, and that Level 1 Instructors are available for recertification and other **SCBA** training.



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3. The training program for initial and annual recertification must include at least the elements below:
    - A. Knowledge of **SCBA** construction and operation;
    - B. Identifying **IDLH** atmospheres;
    - C. Knowledge of by-products and toxic fumes produced by smoldering materials from furniture, carpet, and other household items;
    - D. Knowledge of medical signs and symptoms that may limit or prevent the effective use of respirators;
    - E. A "Skills to be Completed" Check List;
    - F. Reasons for **SCBA** failures and knowledge of emergency procedures;
    - G. Reporting procedures for defective **SCBA**;
    - H. **SCBA** record keeping; and
    - I. Routine station maintenance of **SCBA** after use.
  4. **Personnel** who have not participated in field operations for 18 consecutive months or longer must complete a re-entry program that includes **SCBA** recertification.
  5. The Fire Chief or designee must maintain records of all training and recertification.
- d. **Using and Wearing Respiratory Protection Equipment.**
1. All **personnel** must use appropriate **RPE** when operating in an **IDLH** atmosphere or when entering a **hazardous and/or toxic atmosphere**.
  2. The **N95 respirator/mask** *must not be used during overhaul operations*.
- e. **Face-pieces.** All **personnel** must use a correctly fitted **face-piece**. Correct **face-piece** fit will be determined by a **quantitative fit test**. **Personnel** will be tested during initial recruit/probationary training, annually, and when a new **face-piece** design is adopted. Only **personnel** who have been trained in the fit testing procedure will conduct **quantitative fit testing**.
1. **Personnel** who are required to use **RPE** must not allow any object to enter or pass through the area where the **face-piece** seals with the face.



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- A. Neither beards nor facial hair may interfere with the **face-piece** seal, nor may any object interfere with exhalation valve operation.
  - B. The helmet, head covering, and protective hood must be worn outside the **face-piece** seal, head harness, and straps.
  - C. **Personnel** who wear eyeglasses must use approved frames that do not interrupt the seal area of the **face-piece**.
2. If **FROMS** determines during routine medical examinations that an individual may not be able to obtain a **face-piece** seal because of physical changes (e.g., significant weight loss, dental work, etc.), **FROMS** staff must send the individual to the **SCBA** shop for a supplemental fit test.
  3. **Personnel** will be fit-tested when they report problems related to obtaining a **face-piece** seal, or if supervisory or **FROMS** staff observe conditions that could affect a proper fit.
  4. **Personnel must not** risk exposure by removing the **face-piece** or disconnecting the regulator in a **hazardous and/or toxic atmosphere**.
  5. **Personnel** who detect vapor or gas breakthrough, changes in breathing resistance, or **face-piece** leakage, must leave the **IDLH** atmosphere and must not re-enter until the problem has been resolved. If a maintenance problem may be the cause, the unit must be taken out of service and repaired as described in Sections 5.h. and 5.k. below.
- f. **Emergency Breathing Support Systems (EBSS)**. The **EBSS** connection may be used when a system fails, or if the firefighter/rescuer depletes the air supply of the cylinder in use.
1. **EBSS** may be used **only** when both **personnel** are mobile and ambulatory. If a firefighter/rescuer becomes unconscious, the firefighter/rescuer's partner should call for help and perform appropriate rescue. A rescuer must not connect the **EBSS** to an unconscious firefighter; *the downed firefighter must be removed* from the hazardous area.



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2. Both firefighters **must** follow the Mayday procedure, consider activating their **Emergency Buttons (EBs)**, and activate their **PASS devices** when using the **EBSS** connection.
- g. **SCBAs during Elevator Use.** On incidents involving a potentially **IDLH** atmosphere, **personnel** who enter an elevator must have gained Fire Department Control, and must **wear** **SCBA** before the elevator doors close and the car is permitted to move. **Personnel** must:
  1. check the shaft for smoke or fire;
  2. note the location of the nearest stairwell before entering the elevator;
  3. note the location of the emergency stop switch;
  4. wear full protective clothing and **SCBA** with cylinder valve open and **face-piece** on, with the regulator in hand for rapid connection, and connect the regulator if the elevator car fails to stop at the midway point; and
  5. restrict the elevator operation to upper floors between entry level(s) and a minimum of two floors below the fire, until the fire is under control and the Incident Commander has suspended this restriction.
- h. **SCBA Maintenance and Repair Requirements.** An **SCBA** unit must be taken out of service when any defect is found.
  1. An **SCBA** repair tag must be completed and attached to the unit by the person placing the unit out-of-service. The unit must be transported to the **SCBA** Shop for appropriate repairs.
  2. The Incident Commander or the On-duty MCFRS Safety Officer must impound all **PPE**, including **SCBA** (if worn), that was used by a firefighter/rescuer who has suffered respiratory injuries, burn injuries, or line of duty death where their PPE may have been a factor. The impounded **PPE/SCBA** unit must be bagged, and an Impound Tag must be completed and attached to the equipment. The Incident Commander or On-duty MCFRS Safety Officer **must** take possession of the **PPE/SCBA** and all appropriate documentation, and deliver it to the Fire and Explosives Investigations (FEI) evidence room. All **personnel** who have handled the involved equipment must sign off on the Impound Tag to document chain of custody.





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3. Personnel whose **PPE** has been impounded as a result of their having been involved in an incident will use their second set of gear, or will be issued loaner gear.

- i. **SCBA, SAR, APR, PAPR, and CCBA Records.** A records program must be maintained for all **SCBA, SAR, APR, PAPR, and CCBA.**

1. The records program begins with receipt of the respirator unit, and ends with its disposal. Documentation must include a complete history of all shop maintenance performed on any component.
2. Records must be maintained for the pressure reducer, **face-piece**-mounted regulator, back-pack assembly, and cylinders.
3. Each completed assembly must be identified by the four digit number of that unit or component.

- j. **SCBA/SAR In-Service Inspection and Maintenance.** All **SCBA** must be inspected, cleaned, disinfected, and serviced after each use, according to the manufacturer's recommendations. Routine inspections, in-station preventive maintenance, and shop maintenance must also comply with the manufacturer's requirements.

1. **In-station inspections.** In-station inspections must be logged on forms provided by MCFRS. Station officers must ensure that these forms are used daily and monthly, and that the unit is identified by its four digit number. The forms below must be used:
  - A. A daily inspection form;
  - B. A monthly inspection form; and
  - C. A monthly disinfection log.
2. Original reports must be stored in the station for twelve months.
3. All **SCBA** carried on first-line response units must be inspected daily, and before and after each use.



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4. All **SCBA** carried on second line and reserve units must be inspected weekly.
  5. All **SCBA** carried on staff vehicles must be inspected weekly.
  6. All **SCBA** at the PSTA must be inspected before and after each use.
  7. All **SAR** must be inspected daily.
- k. **Preventive Maintenance.** All **SCBA**, **CCBA**, and **SAR** must receive both preventive maintenance and shop maintenance. All maintenance performed on **SCBA/CCBA** must comply with the manufacturer's manual for operations and maintenance. Deviations may be permitted **only** if authorized in writing by the manufacturer, or the Fire Chief or designee.
1. **SCBA** must receive a complete preventive maintenance inspection on a monthly basis, in accordance with the manufacturer's recommendations.
  2. **SCBA/CCBA** must receive periodic shop maintenance and annual flow testing performed **only** by individuals who have been trained and certified by the manufacturer.
- l. **Cylinder and Compressed Breathing Air Testing and Maintenance.** **Compressed breathing air** used in breathing apparatus must meet the requirements of the Compressed Gas Association, G-7.1, 5<sup>th</sup> Edition, 2004 commodity specification for air. The minimum air quality is Grade D.
1. **Cylinders.** All cylinders must be maintained in accordance with the Compressed Gas Association and the **SCBA** manufacturer's requirements
    - A. **SCBA** cylinders must be maintained in a fully-charged state, and must be re-charged when the pressure indicates 4200 PSI.
    - B. **SCBA** cylinders must be hydrostatically tested according to the manufacturer's recommendations, normally at five year intervals, or when any damage occurs to the carbon fiber wrap. These tests must comply with the U. S. Department of Transportation's rules and regulations, at 49 CFR 180.205.



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2. **Compressed Breathing Air.** Sources of compressed gas breathing air, such as compressors, cascade systems, and storage systems used for filling **SCBA** cylinders, must be tested at least once every three months. Air samples also must be taken after any purification change that could affect air quality.

- A. Breathing air compressors must be maintained according to the manufacturer's recommendations.
- B. A compressor operational log must be maintained at every facility where **compressed breathing air** is manufactured.
- C. A list of approved sources of **compressed breathing air** will be provided to each LFRD. Only approved sources may be used to supply **SCBA**.

#### Section 6. **Responsibilities.**

- a. All **personnel** must ensure that their **SCBA/RPE** is in order and ready for use with the correctly sized **face-piece** when they are assigned a riding position, before entering an **IDLH** or **hazardous and/or toxic atmosphere**, and after each use.
- b. The Incident Commander **must** ensure that **personnel** use the appropriate level of **RPE**.

Section 7. **Enforcement.** The Fire Chief is the enforcement authority for all policies, procedures, and regulations of the Montgomery County Fire and Rescue Service.

Section 8. **Effective Date.** This policy is effective on October 15, 2011.

Approved:

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Richard R. Bowers, Fire Chief  
Montgomery County Fire and Rescue Service

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Date

Respiratory protection policy clean 10-7-11